In re Patent Application of:
DENYER ET AL.
Serial No. **09/891,134**
Filing Date: **JUNE 25, 2001**

In the Claims:

Claims 1 to 11 (Cancelled).

12. (Currently Amended) A method of operating a solid state image sensing array comprising a plurality of active pixels, the method comprising:

resetting each pixel;

reading a first output from each pixel after a first period of time since a prior reset to obtain a first set of image data having a first dynamic range, the first output representing a cumulative signal during the first period of time since the prior reset;

reading a second output from each pixel after a second period of time since the prior reset and overlapping the first period of time and without resetting each pixel to obtain a second set of image data having a second dynamic range, the second output representing a cumulative signal during the second period of time since the prior reset and overlapping the first period of time; and

combining the first and second sets of image data to obtain a resultant set of image data having a dynamic range different from the first and second dynamic ranges.

13. (Previously Presented) A method according to Claim 12, further comprising:

reading at least a third output from each pixel after at least a third period of time and without resetting each pixel to obtain a third set of image data having a third dynamic range; and

combining at least the first, second and third sets of image data to obtain a resultant set of image data having a dynamic range different from the first, second and third dynamic ranges.

14. (Previously Presented) A method according to Claim 12, wherein the first and second periods of time are selected to be an integer multiple of a predetermined lighting flicker period.

15. (Previously Presented) A method according to Claim 12, wherein the image sensing array remains continuously exposed to incident light when the resetting is performed, and when the reading of the first and second outputs are performed.

16. (Currently Amended) A method of operating a solid state image sensing array comprising a plurality of active pixels, the method comprising:

resetting and immediately reading a preliminary output from each pixel; and

reading a first output from each pixel after a first period of time since a prior reset, the first output representing a cumulative signal during the first period of time since the prior reset.

17. (Previously Presented) A method according to Claim 16, further comprising determining a difference between the preliminary outputs and the first outputs to obtain a set

of image data substantially free of noise components represented by the preliminary outputs.

18. (Previously Presented) A method according to Claim 16, wherein the first period of time is selected to be an integer multiple of a predetermined lighting flicker period.

19. (Previously Presented) A method according to Claim 16, wherein the image sensing array remains continuously exposed to incident light when the resetting is performed, and when the reading of the preliminary and first outputs are performed.

20. (Previously Presented) A method according to Claim 16, further comprising:

reading a second output from each pixel after a second period of time and without resetting each pixel to obtain a second set of image data having a second dynamic range; and

determining a difference between the preliminary outputs and each of the first, second and any subsequent outputs to obtain a plurality of sets of image data each of which is substantially free of noise components represented by the preliminary outputs.

21. (Currently Amended) A solid state image sensor comprising:

a plurality of active pixels;

a vertical shift register connected to rows of said plurality of active pixels;

a horizontal shift register connected to columns of said plurality of active pixels; and

scanning circuitry connected to said vertical and horizontal shift registers for reading said plurality of active pixels by resetting each pixel, reading a first output from each pixel after a first period of time since a prior reset to obtain a first set of image data having a first dynamic range and with the first output representing a cumulative signal during the first period of time since the prior reset, reading a second output from each pixel after a second period of time since the prior reset and overlapping the first period of time and without resetting each pixel to obtain a second set of image data having a second dynamic range and with the second output representing a cumulative signal during the second period of time since the prior reset and overlapping the first period of time, and combining the first and second sets of image data to obtain a resultant set of image data having a dynamic range different from the first and second dynamic ranges.

22. (Previously Presented) A solid state image sensor according to Claim 21, wherein said scanning circuitry further reads at least a third output from each pixel after at least a third period of time and without resetting each pixel to obtain a third set of image data having a third dynamic range, and combines at least the first, second and third sets of image data to obtain a resultant set of image data having a

dynamic range different from the first, second and third dynamic ranges.

23. (Previously Presented) A solid state image sensor according to Claim 21, wherein the first and second periods of time are selected to be an integer multiple of a lighting flicker period.

24. (Previously Presented) A solid state image sensor to Claim 21, wherein said image sensing array remains continuously exposed to incident light when the resetting is performed, and when the reading of the first and second outputs are performed.

25. (Previously Presented) A solid state image sensor to Claim 21, wherein said plurality of active pixels, said vertical and horizontal shift registers and said scanning circuitry are incorporated into a camera.

26. (Currently Amended) A solid state image sensor comprising:

a plurality of active pixels;

a vertical shift register connected to rows of said plurality of active pixels;

a horizontal shift register connected to columns of said plurality of active pixels; and

scanning circuitry connected to said vertical and horizontal shift registers for reading said plurality of active pixels by resetting and immediately reading a preliminary output from each pixel, and reading a first output

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from each pixel after a first period of time since a prior reset and with the first output representing a cumulative signal during the first period of time since the prior reset

27. (Previously Presented) A solid state image sensor according to Claim 26, wherein said scanning circuitry determines a difference between the preliminary outputs and the first outputs to obtain a set of image data substantially free of noise components represented by the preliminary outputs.

28. (Previously Presented) A solid state image sensor according to Claim 26, wherein the first period of time is selected to be an integer multiple of a predetermined lighting flicker period.

29. (Previously Presented) A solid state image sensor according to Claim 26, wherein said image sensing array remains continuously exposed to incident light when the resetting is performed, and when the reading of the preliminary and first outputs are performed.

30. (Previously Presented) A solid state image sensor according to Claim 26, wherein said scanning circuitry further reads a second output from each pixel after a second period of time and without resetting each pixel to obtain a second set of image data having a second dynamic range, and determines a difference between the preliminary outputs and each of the first, second and any subsequent outputs to obtain a plurality of sets of image data each of which is

substantially free of noise components represented by the preliminary outputs.

31. (Previously Presented) A solid state image sensor to Claim 26, wherein said plurality of active pixels, said vertical and horizontal shift registers and said scanning circuitry are incorporated into a camera.